US/CHINA WATER RESOURCES MANAGEMENT WORKSHOP
TUCSON, ARIZONA
APRIL 19-22, 1999

1. Executive Summary

At the request of the White House Office of Science and Technology, the first bilateral workshop on Water Resource Management issues in China and the United States was held in Tucson, Arizona, April 19-22, 1999. This workshop was the first step in a bilateral water resources management program under the auspices of the U.S. - China Forum on Environment and Development, co-chaired by Vice President Al Gore and Premier Zhu Rongji.

The purpose of the workshop, which was attended by 53 participants from the People's Republic of China, and 115 participants from the United States, was to develop a coordinated, sustainable water resources management program between the United States and China.

This required a comparison of approaches to water resources management and identifying and prioritizing key areas where ongoing cooperation could inspire positive changes in water resource management in both countries, and ultimately, on a global scale.

The workshop focused on four discussion areas, developed in cooperation with the Chinese participants:

- Agriculture and Forestry
- Ecological Requirements
- Domestic and Industrial Water Issues
- Flood Control and Drought Planning/Mitigation

In addition, the participants agreed that matching river basins would be compared and contrasted to put the discussion areas in perspective:

- Huang He (Yellow River)/Rio Grande
- Yangtze/Mississippi.

As part of the conference, tours were arranged to the Walnut Gulch Watershed, one of the best instrumented watersheds in the United States, with approximately 35 years of data generated; the Semi-Arid Land-Surface-Atmosphere (SALSA) project at the San Pedro River; and the Maricopa Agricultural Center. Poster sessions were also available to highlight scientific projects and give commercial vendors an opportunity to display their products.

During the workshop, working group sessions looked at water resources in the context of agriculture and forestry, ecology, domestic and industrial water use and waste water and flood and drought planning and mitigation. The discussions focused on soils erosion, sedimentation issues, water conservation in agriculture, ecological research and restoration, natural resources valuation, adaptive management, conservation and recovery matters, regulatory issues of domestic and industrial water management, flood and drought modeling, forecasting, planning, prevention, control and mitigation. Land use regulation and management, and water control and quality issues were given serious consideration, including such subjects as irrigation, salinization, pollution prevention, control and treatment, and watershed experiments and modeling at the regional and national scales. Flood plain zoning and insurance matters were considered, as well as watershed research, dryland farming and the impact of climate change and variability on water resources. The working groups examined issues associated with wetlands, coastal waters, and other ecosystems and habitats, along with application of geographic information systems and area wide monitoring. In addition, food production matters, including water utilization efficiency improvements and cloud seeding were considered, as well as financing of municipal water projects and other technology matters. Needs for improved prediction, assessment and monitoring were identified with special consideration given to the potential impact of climate variability on water resources.

One goal of the workshop was to produce a prioritized list of areas and projects for future action. The recommendations were as follows:

- Training for personnel engaged in the management of water resources
- Exchanges of technical experts

- ❄Implementation of research and studies on water resource management issues
- ❄Facilitation of commercial opportunities for water resource management
- ❄Establishment of joint Water Resource Management Working Group under the U.S.-China Joint Commission on Science and Technology Cooperation.

1. Path Forward

The first step in moving forward with the recommendations has been implemented.

Several agencies are in the process of organizing training sessions for U.S. and Chinese scientists. The following training sessions have been proposed:

1. *Training Program on Water-Saving Irrigation and Rehabilitation of Large and Medium Irrigation Districts* - Bureau of Reclamation already discussing with MWR, support from USDA, DOE, state and local water districts.

2. *Training Program on Management of Flood Detention Areas and Flood Insurance* - Corps of Engineers, support from Office of Foreign Disaster Assistance (USAID), state and local flood control districts.

3. *Training Program on River Basin Management* - Tennessee Valley Authority under existing agreement, support from USGS, USDA, BuRec, NOAA, and Corps of Engineers

4. *Training Program on Inter-basin Water Transfer Projects* - Bureau of Reclamation already discussing with MWR, support from Army Corps, OSTP (NOTE - the potential political issues of transfer projects will be discussed within OSTP and other agencies before this is scheduled).

5. *Training Program on Wastewater Treatment and Seawater Desalination* - EPA, support from BuRec, Commerce, DOE and industry

6. Training Program on Water Resources Management and Water Investment Policy - Office of Science and Technology Policy, support from multiple agencies, Army Corps, Academic institutions and the Wilson Center to coordinate NGO involvement.

In addition, planning is underway for a Green Chemistry/Pollution Prevention trade program to highlight commercial opportunities in avoiding water contamination.